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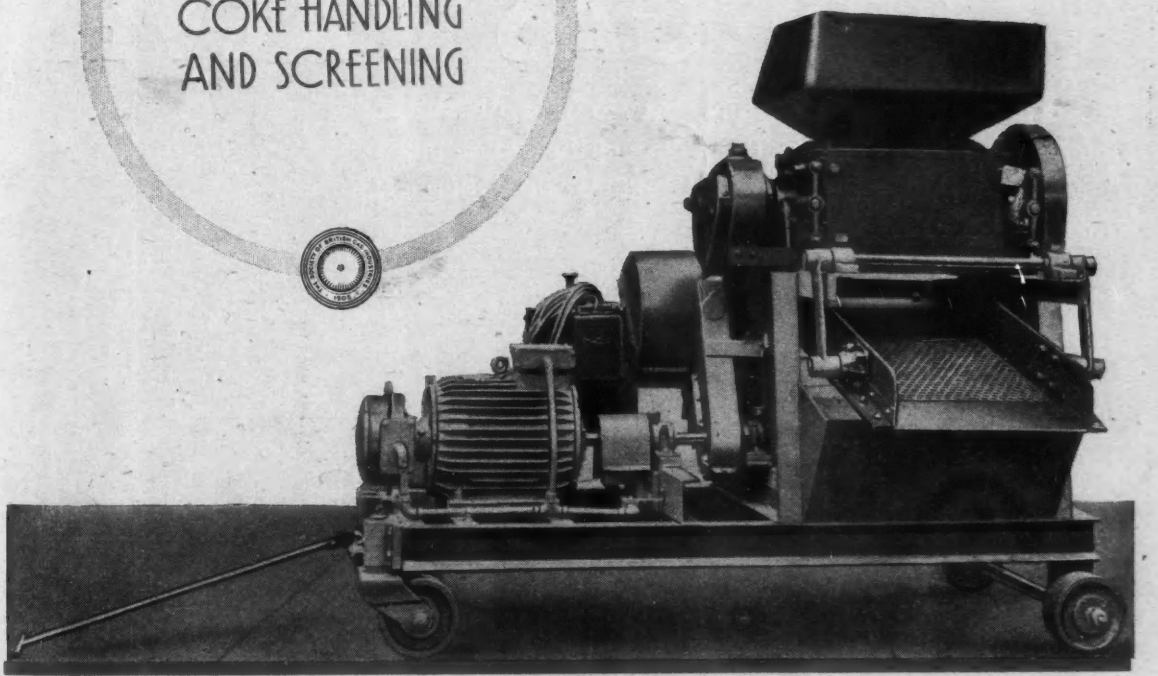

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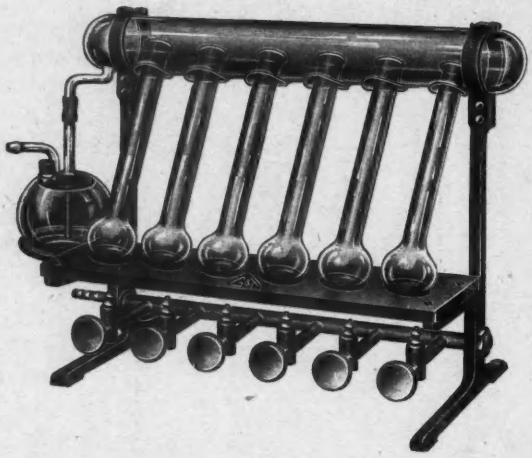

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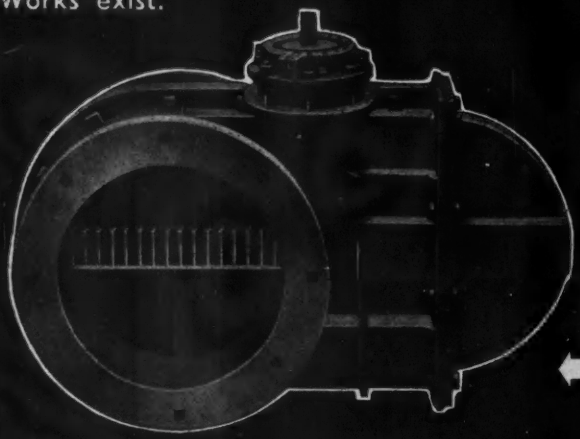

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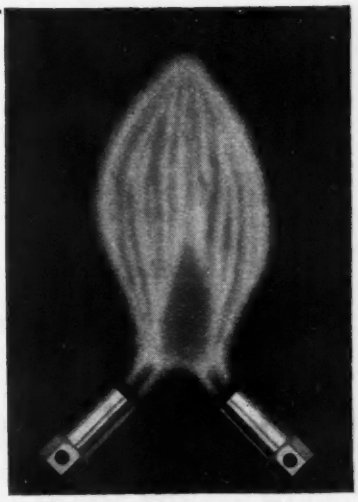

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GAS JOURNAL, OCT. 20, 1943

VOL. 242 95th YEAR No. 4196

EDITORIAL NOTES

MUSKETS, AND OTHER MATTERS

BY now—considerably more than a week since the return of B.G.F. and/or P.W.P. delegates to their districts from the final sitting on the planning draft—it will be common knowledge that the forwarding of the Report (with only minor modifications from the draft) to the Minister of Fuel and Power was agreed by all the districts except one. And when we heard of this step forward in the Gas Industry's plan for planning, there sprang instantly to mind, through one of those unaccountable mental processes, the legendary figure of Sam on parade, rendered so famous by Stanley Holloway's brilliant impersonations. "All excepting one man, who was in the front rank, a man by the name of Sam Small." Not that the cases are strictly parallel. Sam was an individual, and it is a whole district to which we seek to liken him; and Sam was a Lancashire lad. Yet—"Him and the sergeant were both daggers drawn; they thought nowt of each other at all." And, if we may take the hitherto headquarters organization of the Gas Industry to represent Sam's *bête-noire* sergeant, is it not pertinent to ask whether, when it arrives on the scene, the British Gas Association will have the same effect as did the Duke of Wellington with regard to Private Small's threatened non-co-operation on the eve of the battle of Waterloo? Neither history (nor Stanley Holloway as far as we can recollect) records the exact reason for the bad blood which existed between Sam and his sergeant; but, be it noted, the matter required careful handling even by the Iron Duke himself, and it was only in response to his tact and gentle words that Sam consented eventually to pick up his musket. It was undoubtedly with relief that the great leader then remarked, "Righto boys, let battle commence." He knew well enough that at heart Sam was one whom one would wish to have in the ranks when battle did commence. The Gas Industry, too, has need of the district whose musket has so far, shall we say, given a "spot of" trouble on parade.

Lest, by this speaking in parables, we imply too rosy a view of almost universal harmony, we must needs take note of the diversity of opinion on the future of the Industry which has appeared recently in our columns and in many other places. When we first called attention in the "JOURNAL" of March 31 last to the lamentable absence of any apparent interest on the part of gas ownership in the fate of its property, we had no idea that any so sudden and so violent reaction was possible after almost a century of somnolence—at all events as far as municipalities were concerned. Now, only a few months later, we find active partisanship for one point of view by the larger municipalities, a self-protection association formed by the smaller fry, all-out nationalization advocated on principle by others, and the holding company movement, to say the least of it, not hiding its light bashfully under a bushel. Meanwhile, another big link-up by London companies is announced as a *fait accompli* without preliminary propaganda, as much as to say, "that is what we call integration without tears, and if anybody wants to municipalize us, let him count the number of mayors who would want to cut-in on the disintegration."

Nationalization was advocated in our columns recently by Mr. G. E. Currier as a very drastic means of achieving ends which would appear to be attainable without a political upheaval. We read into his letter no special desire for nationalization for its own sake. Commander Hyde C. Burton, on the other hand, quite clearly detests nationalization in any shape or form [see p. 485]. And when it comes to this point, we must quite frankly decline to be drawn into editorial discussion of an exclusively political issue. We are primarily a technical paper, but we consider it our business to discuss Gas Industry internal politics, and to give to correspondents such space as the Paper Control enables us to do. Even so, we must confine discussion in our columns to issues which directly affect the Gas Industry, and do not feel justified in opening them to views on the merits or otherwise of private and public ownership in general. And when large municipalities which have for years run gas undertakings of their own are wishful of handing over to any national bureaucratic control the interests of their own ratepayer consumers, we can only regard it as being in the realm of pure politics, and consequently beyond our scope.

BEST USE OF COAL

WITH a very strong supporting caste of "stars" in every branch of the vast fuel field, Dr. E. W. Smith was installed last Thursday as President of the Institute of Fuel. The proceedings, attended by nearly 500, were in the happiest vein, and the Minister of Fuel and Power was present to pay tribute to Dr. Smith's work when he was at the Ministry, and to assure him of the Ministry's support and sympathy during his year of office. The new President was given an enthusiastic welcome. His occupancy of the presidential office comes at a time when more thought and attention than ever before are being directed to the use of coal wisely, and Dr. Smith's intimate knowledge and long experience of fuel problems from many angles of both an administrative and a scientific nature should, we think, be singularly helpful at the present juncture in helping to weld together in common purpose all the fuel industries and interests. His influence, guidance, and inspiration will, we are sure, prove of great benefit; and he assured Major Lloyd George that his Ministry has the fullest support of the President and Council of the Institute of Fuel, that they will continue to serve the Minister in all directions to the limit of capacity, and irrespective of personal views or conveniences in connexion with this all-important problem of using coal wisely.

Defining the functions of the Institute, which provides such an admirable platform for discussion of any subject relating to the fuel industries, Dr. Smith remarked in his Presidential Address that it aimed at ensuring that every phase of the relevant problems is explored thoroughly and scientifically, and at seeing that adequate means are developed for getting at the facts. There could be no stauncher advocate of fact-finding as the one strong basis for organization and development than Dr. Smith himself; "planning" on scant information is merely an academic diversion, and in several respects our information on the fuel-using industries leaves many gaps to be filled. We have much fact-finding to undertake before we can arrive at anything like a true picture of the distribution of consumption of energy—energy derived from coal—in the country, and we may well have to modify our census of consumption in the various districts. To what extent, for example, does the Gas Industry "consume" coal? Present recording of "facts" suggests that it consumes all the coal supplied to it, whereas it processes the bulk, without consuming a great deal. There is much more in this than a mere quibble of words. There is obvious need for the collection and clarification of facts and information, not spasmodically, but as a continuous process necessarily entailing continuous diges-

tion. The fuel industries have not, we suggest, evaluated this need.

Fact-finding as an essential preliminary to sound development was, of course, only an isolated topic among the many questions touched upon by Dr. Smith in his Address, which we print in full in our issue to-day, and which was a broad survey of the fuel problem as a whole in relation to future needs. And looking to these needs, he suggested that from a national point of view the coal, gas, and electricity industries should reverse completely their past policies—that while supplying the consumer with all his requirements of heat, light, and power in the most liberal and necessary way, should at the same time guarantee the nation that in fact such supplies will be used in the most efficient manner. And this implies systematic education in the right use of the right fuel for every class of the community. Who will formulate the lines which such education should follow? Dr. Smith did not supply answer to the query; and here again we think that maybe the solution will be found *via* knowledge of the facts of fuel waste and fuel usage, and their intelligent digestion and interpretation through broad-minded agreement rather than coercion. In which regard and in spite of the overlapping of heat services we can accomplish a great deal for the common good without approaching anything resembling a 100% agreement.

In the welding together of the fuel industries we agree with Dr. Smith that the problems of each industry—coal, gas, coke, electricity—should be studied separately and solved as far as possible prior to ultimate integration. As far as the Gas Industry is concerned, is there justification for so many individual autonomous units of production and distribution as exist to-day? To this question Dr. Smith had no uncertain answer. Overhaul, he said, is long overdue, and it should not depend on the unplanned bargaining of one undertaking with another. The Gas Industry, he added, should be both rationalized and regionalized in the interests of the gas consumer and of the gas undertaking alike. And—his major point, his renewed plea—the form which such a regionalization and rationalization should take should depend on the findings and recommendations of an independent committee. The committee—and now we quote from his Address—"would take evidence from all interests concerned, both from within the Industry and outside. I am well aware that the difficulties will be great, but the national interest should come first, and local parochialism and vested interests will have to be convinced that any changes that are envisaged are in the national interest. Whatever is eventually done, it is to be hoped that the new orientation will provide still better opportunities for initiative from the administrators, the engineers, the chemists, and other technicians on whom the future of the Industry depends." The findings of any such impartial and independent committee should follow the evidence presented, and the evidence presented would have value and persuasion in direct ratio to knowledge of facts and the sincerity and authenticity of their presentation—a point which, we suggest, the Industry should bear in mind, the while asking itself whether it is sufficient to form a fact-finding committee for a few months as a sort of sporadic gesture and then close the shutters to withhold further light.

SURPRISING DIFFERENCES

THE other major item at the meeting of the Institute of Fuel was the Melchett Lecture by Dr. E. S. Grumell, Chairman of the Fuel Efficiency Committee of the Ministry of Fuel; it had for its title "Conservation of Resources," and again was concerned with the best use of coal. We shall refer to the Lecture more fully in a later issue. Dr. Grumell discussed at some length the preparation of low ash coals, suggesting that full use is not made of the easily cleanable properties of British coals, and that the industries particularly interested, such as the carbonizing and the iron and steel industries, should at least meet to examine the economics of the question, especially in the light of a rational price structure. The time, he said, is long overdue when producers, appliance makers, and consumers should meet to discuss their respective requirements—not between isolated pits and isolated consumers, but between the coal industry and consumers in general.

Under war conditions the variations in the nature of the coal supplied to gas undertakings, and particularly its high ash content, have involved great loss of efficiency and increased wear and tear on carbonizing plants. Nor was the Gas Industry at all happy about its supplies of coal during the years immediately preceding the war; instead of improving, the situation was deteriorating in those pre-war years. Now, of course, we are suffering much more from high ash content, and colliery undertakings in general appear to have made little endeavour to maintain pre-war standards. We recall the comments made at the Institution meeting this year by Mr. E. Crowther, of Newcastle, who remarked that the present system of pit targets, bonus calculations and the like encourages lack of attention to the matter, and indicates either complete ignorance of psychology, or a cynical disregard for the consequences by those responsible for it. Indeed, if the men working on the picking belt do their job conscientiously they are in the unhappy position of sabotaging the pit target and the colliery bonus as the system operates. And the Gas Industry and its consumers suffer, without redress.

There are, however—and we would emphasize this—certain collieries which are creditable exceptions to this generalization, and we shall do well to remember them when the time comes that we can give practical expression to our views. Examination of the surprising differences which exist between the aims and practices of the various colliery undertakings is essential to post-war plans regarding the supply as far as is possible of the right kinds of coal for gas-making purposes; and the attention which is being directed now to the matter of ash content is all to the good.

Post-War Building

Since we last referred in these columns ("JOURNAL" of April 21) to the work in connexion with the study of building technique initiated in 1942 by the Directorate of Post-War Building, considerable progress has been made by the Codes of Practice Committee, the creation and functions of which we have outlined previously. We were told of this progress at a Press conference at the Ministry of Works last week, when the purposes of the classification code, which sets out the functional requirements of a building as a whole irrespective of the method of construction and the type of equipment installed in it, were explained to us. This code will comprise recommendations as to the assumptions to be made in undertaking the design of any projected building in order to satisfy the requirements of occupancy and site, and will take the form of a statement of requirements relating to buildings classified according to the use which is to be made of them. For instance, the classification code will indicate suitable temperatures to be maintained in the various parts of a building according to expected occupancy. It will classify various site conditions in terms of severity of exposure as this affects the heat demand, and will lay down guiding principles as to the amount of heat insulation which should be provided in the building structure for buildings with various heat demands. In the use of illumination the code will indicate the assumptions to be made with regard to intensity of illumination, whether daylight or artificial, for various occupancies. While, therefore, the classification code will relate to the functional requirements of a building, the general series of codes, the drafts of which are now being undertaken by various institutions for the Committee, including, of course, The Institution of Gas Engineers, will contain the results of the available knowledge and experience as to the methods of construction and the materials to be used in order to meet the recommended functional requirements in the classification code. They will provide complete freedom of choice to those concerned with design and construction, but will indicate what is considered to be good practice in order to achieve the desired performance of components and the building as a whole.

The Second Report of the Codes of Practice Committee was published on Monday of this week. It comprises three chapters and certain appendices. The first two chapters describe the progress made in carrying out the programme of drafting the comprehensive scheme of building codes, which was described in the First Report, issued in March, and the third chapter sets out the Committee's conclusions on the preparation of codes for civil engineering and public works.

Personal

The post of Manager of the Eyemouth and District Gas-Works has been filled by the appointment of Mr. WILLIAM STEVEN, at present holding a similar position at the Cove and Kilcreggan Gas-Works.

Obituary

Mr. J. B. BOULDERSTONE, London Office Manager of Richmonds Gas Stove Company, died suddenly on Oct. 12 in his 54th year. He was for 21 years with the Chester United Gas Company, leaving in 1926 to take up the appointment of District Manager with the Southgate Gas Company. Mr. Boulderstone joined the London Office Staff of Richmonds Gas Stove Company in March, 1938, and at the time of his death was in charge of the London Office.

* * *

The death has taken place of Mr. DAVID BUCHAN, for a long period a Director of Lochgelly Gas Company, Ltd., Fife.

Diary

Oct. 21.—Midland Junior Gas Association: Chamber of Commerce Buildings, Birmingham, 4.15 p.m.
Oct. 21.—Midland Association of Gas Engineers and Managers: King Edward House, Birmingham, 2.30 p.m.
Oct. 21.—London and Southern Junior Gas Association: Gas Industry House, 7 p.m.
Oct. 23.—Manchester and District Junior Gas Association: Meeting in Liverpool, 1.30 p.m.
Oct. 23.—Scottish Junior Gas Association (Western District): Meeting at Paisley, 3 p.m.
Oct. 29.—Manchester District Association of Gas Engineers.
Oct. 30.—Yorkshire Junior Gas Association: General Meeting, Bradford, 2.30 p.m.
Nov. 5.—National Smoke Abatement Society: General Meeting and Conference, Caxton Hall, S.W. 1, 10 a.m.
Nov. 17.—Eastern Counties Gas Engineers' and Managers' Association: Gas Industry House.
Nov. 26.—Southern Association of Gas Engineers and Managers (Eastern Section), Paper by Dr. Weston and Dr. Haffner, entitled "New Evidence in regard to the Mechanism of Carbonization in Continuous Vertical Retorts," Gas Industry House.

Letters to the Editor

Future of the British Gas Industry

DEAR SIR,—We have lately seen an example of what concerted action and resolute expression can do in the case of a certain section of the community who refused to be swallowed up by the State-machine. I refer to the actions taken and the resolutions passed by the British Medical Association in their determination to maintain the independence and integrity of the Medical Profession. They have made it quite plain that no State Controlled Medical Service could be imposed against the will of the individual men and women who compose it, and although there may be a small section of the profession who would prefer to be salaried officers of the State, the fact remains that, as a whole, the profession showed itself to be capable of resisting regimentation. An extension of the existing Public Health Services under terms agreeable to the profession is something very different from the proposals emanating from outside the profession to put medicine virtually under the complete control of the State.

The particular point to which attention should be drawn is the *determined refusal of a voluntary association, representing a whole profession, to accept in principle the concept that the planners and intellectualists have any right whatsoever* to impose upon members of that association a doctrinaire and political scheme without due regard either to the interests, the experience, or the judgment of those who may be correctly presumed to be the experts in the matter.

By analogy, the Gas Industry also need have little fear of losing its independence if, but only if, it speaks with one voice and with determination upon its post-war future. And by one voice I do not mean a voice that disregards those healthy differences of viewpoint that exist within the Industry, and which, in point of fact, are the reasons for its virility and development.

It is common knowledge that, broadly speaking, of the gas sold in this country, one-third is supplied by undertakings directed and administered by municipal control on behalf of ratepayer owners, and two-thirds by undertakings under company control (statutory and non-statutory) on behalf of stockholder owners. Both systems by and large, through their local administration, are in a position to knit together the interests of consumers, employees, and owners; both systems are in the hands of administrative bodies which, in the event of incompetence and inefficiency, can be displaced by those whose interests are being mishandled—the stockholder or ratepayer owners, as the case may be. Both systems should, therefore, have little difficulty in uniting to agree. State control and the bureaucratic centralization or direction, which would result from nationalization, is directly contrary to their interests.

It is possible, also, that the Industry's hands would be strengthened if it took the trouble to place the issues clearly before its own employees. Many of us are inclined to congratulate ourselves on the co-partnership principle, which, it is true, is nowhere better exemplified than in the Gas Industry. In many cases the co-partners are the principal stockholders of the undertaking in which they are employed, and their funds run into hundreds of thousands of pounds. Has any attempt been made to secure their support to the Gas Industry's determination to be free to develop in its own way? I venture to suggest that this is a time when the real value of co-partnership might be tested, and when the Industry might do well to rally to its support those 250,000 employees whose amicable relations with their employers have been a feature of Gas Administration for the past generation.

In these days, when the world seems almost dominated by misapprehended slogans, when an offer of "something for nothing" has only to be made for it to be accepted immediately without a thought as to whether its performance is possible, probable, or even desirable, industry, generally, seems to have signally failed to realize that it, too, must play its part in politics if it is to survive, and that if it allows the bureaucrats and the demagogues to plan the work and the leisure and the lives of its constituents, and makes little or no attempt to put the other side of the picture before the public, it cannot justly complain if its case goes unheeded and unheard. It is heartening to see, latterly, that the leading figures in Industry are, in their speeches, giving this matter special attention, but something very much more than speeches is needed.

I have recently returned from a visit to Canada, where I made a point of studying the articles and advertisements in the Canadian Press in order to see how far the individualistic character of the people was reflected in the articles that are served up to them, and in the advertisements which form the background of thought-formation in many millions of minds.

I was much impressed by two points:

(1) The outspoken and frank comments of publicists and leader-writers on national faults and weaknesses, and the exhortations to the public on the need to back up the fighting forces to the utmost.

(2) The fact that industry and commerce realize the latent danger to the national interest which exists as the result of an excess of semi-communistic, sentimental, and ideological theories (having no regard to hard and inescapable facts), and is itself taking steps to combat it by first-class propaganda of a sane, realistic, and virile type.

This means, of course, the expenditure of very large sums of money by commerce on background publicity, and I am sure that something on the same lines is required in our own country—but it must not be cheap and it must be first-class.

The Gas Industry is, in my view, peculiarly suited to be the forerunner of an educative movement by means of which the public, as well as its own employees, can, if they so desire, consider positive alternatives to those so constantly presented to them by the bureaucratic politician; alternatives which offer scope for efficient endeavour and self-reliant enterprise. I feel that it is of the highest importance that the Gas Industry should, by its example, encourage all those who seek to express their determination not to be State-controlled. By advertisements and posters, by Press articles and publications, by films and lectures the Gas Industry should seek to erect the foundations of a united front of all industry against those whose policies would destroy our British characteristics of individualism and independence on the altar of political power.

There will be a lot of difficulties—we must get over them. The Medical Profession has set the ball rolling against State control. Let the Gas Industry, with its resources, its organization, and its brains, make sure that it gathers speed and momentum. I venture to say it will not lack adherents if it sets its mind to the task and remains true to its principle of service to the public. Not all your readers will agree with such a frank exposition of a political faith, but I am one of those who believe that there are times when plain speaking is vital, and if ever there was a time when vision and political discernment were necessary, that time is now.

It is essential then, I suggest, that industry and commerce throughout the country should take it upon itself to educate the public to an understanding of the issues which are at stake, and to impress upon the ordinary man and woman that if they value personal freedom they must comprehend the principles upon which it is founded. To yield up voluntarily our freedom of action for a time in order to destroy the tyranny of Nazism and Fascism is one thing; to lose it for ever by the imposition of another form of Totalitarianism, a State-controlled and regimented political economy, is quite another, and certainly not one for which those who wear His Majesty's uniform are working or fighting. Let there be no mistake—*for State planning to be effective, compulsion on men and women is an absolute corollary.*

Such an educative effort will cost industry and commerce much money and much hard thinking, but upon its success will depend, I feel certain, the ultimate survival of individual enterprise and endeavour.

A characteristic of all American and Canadian publicity and propaganda, to which I have earlier referred, is pictorial representation

of the highest order, together with clear and pungent text and copy. In many cases advertisements had no connexion whatsoever with the particular trade or product of the advertiser. Yet every one was very much concerned indeed with the preservation, in the mind of the public, of the love of freedom and independence and non-regimentation. There was not one that did not make it quite clear that there was no intention to sacrifice for ever that freedom and independence which are the birthright and the heritage of true democracy.

I suggest, therefore, that the National Gas Council and the British Commercial Gas Association should take steps forthwith to inaugurate a national publicity campaign with the following objects:

(1) To disabuse the public mind from the view that individualism and enterprise are synonymous with grab, greed, and *laissez-faire*; to make it clear that to be against State control is certainly not to be against properly planned and co-ordinated integration within the Industry itself, nor, indeed, to be against such reasonable control as may be necessary during the period of transition from war to peace.

(2) By example, to show industry and commerce throughout the country that the whole issue lies largely in its own hands, and that it is up to industry, with the resources and organization at its command, to promote, by every medium available, a flow of first-class propaganda and publicity for the education of the public, who, after all, are the ultimate masters of our destinies.

(3) To this end, to ensure that such propaganda is on a *national* and not merely on a sectional plane, is positive and not negative, and has something of service, duty, and the nobler motives of work and toil as its background rather than a mere material appeal to the purely selfish instincts which we all know are in all of us, it must seek to encourage in the public mind a desire to admire and *emulate* successful enterprise, and not to be *covetous* and *envious* of it; it must endeavour to inculcate an understanding that "something for nothing" is and always will be a snare and a delusion, and that "social security" and "full employment," if they are not to be mere political catchwords, cannot be had for the asking, but are indissolubly bound up with co-operation between employers and employees, and a mutual understanding of each other's problems. The Gas Industry is second to none in its relations with its employees and in its schemes for their material well-being; in its relations with its consumers and customers; in its reasonably high standard of service to the community generally. It has its deficiencies and its failings, and we should be foolish not to admit them and do all in our power to put them right, but that should not prevent us from taking the lead in a bold way in putting forward, in a positive form, our own proposals for our post-war development, and creating, in the public mind, a comprehension that we are very much alive to the needs of the future, and have in our files actual *practical* plans for improved service to the public—plans which are not the creation either of Bloomsbury or of Whitehall.

If other great industries followed our example, there would be disseminated throughout the country, by means of National Associations, Employers' Federations, Chambers of Commerce, and other similar bodies, on a scale never before contemplated, a promulgation of sane and practical views for the rehabilitation and development of post-war Britain which the man-in-the-street would have in front of him as an alternative to the nationalized post-war structure which is offered on every hand. *If Industry does not take some such steps as these, then those in high places, who even now are publicly announcing how they are proposing to direct our lives, will, between them, have us all in the bag without the shadow of a doubt.*

I feel I ought to apologize for the length of this letter. If I forbear to do so it is only because I regard the subject as of crucial importance to the Gas Industry, and one which demands a clear exposition of the fundamental principles for which it stands by those at the top to whom its whole future and fortunes are entrusted.

I trust that I may find a considerable measure of agreement among your readers.

5, *Great Winchester Street,*
Old Broad Street,
London, E.C. 2.
Oct. 11, 1943.

Yours faithfully,
HYDE C. BURTON,
Director, Brighton, Hove, and Worthing Gas Company.

Planning and Private Enterprise

From LORD STRATHSPEY.

DEAR SIR,—British manufacturers do not seem as yet to have made up their minds about how they propose, when the war ends, to go about selling to other countries what they make.

It is true that the Board of Trade set up, last year, a Central Committee of Export Groups; although others have suggested that it would be well if the Groups themselves were to begin to fade out of existence when peace arrives. The Association of British Chambers of Commerce advocates a Council of Industry. The Institute of Export and the Federation of British Industries have probably got plans of their own.

Although there is so much diversity in the approach to the problem, the need for an expanding export trade is, naturally, accepted by all. There is an almost equal unanimity that each industry must be left in control of its own affairs; that the flexibility of private enterprise ("a good ship," to quote Sir William Beveridge, "which has brought us thus far") must be reconciled with the rigidities of the planner.

A step out of this confusion about the means to be taken to attain an end universally desired is indicated by the action of the rubber industry, which has now grouped 24 distinct Associations into one Federation of 289 firms with 320 factories. Their common bond is that all of them use the same raw material—for shoes, tyres, belting, gloves, sports goods, garments, and a variety of other products.

The example of this important cross-section of British industry might usefully be considered by other trade associations who will have already been impressed by the advantages of working together in wartime.

Let them federate. When they have done so they will hold the key to regulating the flow of trade into those channels which will yield maximum employment to the men as they come home.

Hylton House,
Rottingdean,
Sussex;
Oct. 16, 1943.

Yours faithfully,
STRATHSPEY.

National Gas Council

A Meeting of the Central Executive Board of the National Gas Council was held on Oct. 12, at Gas Industry House. The chair was taken by Major G. H. Kitson (Vice-Chairman). Before proceeding with the business of the meeting, the Chairman offered his congratulations and those of the Board to Colonel H. C. Smith upon his appointment as Deputy-Lieutenant of the County of Middlesex.

A report on the general coal position was received. It was stated that the Council had replied to Lord Hyndley on Sept. 23 with regard to the proposals put forward by him for dealing with the coal situation during the forthcoming winter months, and that a letter of appreciation of the desire of the Council to co-operate had been received from Lord Hyndley. A report of the meeting of the Coal Committee which had been primarily called to consider the correspondence which had passed between the Coal Controller (Lord Hyndley) and the Conjoint Conference in regard to the price of coal was presented.

Dr. Evans, Chairman of the Committee, made a report to the Board on the various questions that had been discussed at the last meeting of the Gas Advisory Committee. He referred, *inter alia*, to the coal and labour position, calorific value, ventilation in retort houses, and waterless gasholders.

Mr. Halkett, Chairman of the Standing Committee appointed by the Board, consisting of purchasers of coke oven gas, reported that the Committee had held its first meeting on Sept. 15.

The appointment of Mr. James Clark, C.A., as Secretary of the National Gas Organizations in Scotland, was reported and approved.

It was stated that a Report by the General Management Committee on the R.I.B.A. Exhibition held at the National Gallery from Feb. 25 to May 1 had been circulated. In view of the fact that there was a deficiency in the funds of the Exhibition, it had been suggested that the guarantors (of whom the National Gas Council was one) should be called upon to help meet this deficiency. The Board formally sanctioned payment of the guarantee given by the National Gas Council.

The following members were reappointed to represent the Council on the Grand Council of the Federation of British Industries.

(*a*) *Main Group* 9, *Section* 1 (*Chemical Fertilizers and Explosives*).—Dr. E. V. Evans and Mr. W. Gordon Adam.

(*b*) *Main Group* 14, *Sub-Group* 3 (*Public Utilities*).—Mr. J. Terrace, Colonel H. C. Smith, and Lt.-Col. Sholto S. Ogilvie.

A letter was read from the National Smoke Abatement Society, inviting the Industry to send a speaker to a conference of that Society to be held at Caxton Hall on Friday, Nov. 5. The question was remitted to the British Commercial Gas Association.

The next meeting of the Board will take place on Nov. 9.

Evaluation of Crude Benzole

Mr. L. A. Sim, of L. A. Sim & Co., 8, Upper Mulgrave Road, Cheam, Surrey, and of Bitmac, Ltd., has been requested by the Ministry of Fuel and Power to get together a Committee representing all independent benzole producers for the purpose of discussing the proposed Order covering the evaluation of crude benzole. Will any independent producer, not already notified, please communicate with Mr. Sim.

The Ministry of Home Security has decided to relax the ban on street lighting in Edinburgh and permit "star" lighting.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in the "Journal" should not be taken as an indication that they are necessarily available for export.

INSTITUTE OF FUEL

Presidential Address

by

Dr. E. W. SMITH, C.B.E.,
F.I.C., M.I.Chem. E., M.Inst.Gas E.,

on the occasion of his installation, Oct. 14

DURING the last few years a demand has been frequently expressed that there should be a "National Fuel Policy." I have expressed this view myself on more than one occasion, but neither I nor anyone else has defined clearly what is meant by this phrase. In my view the policy which should be adopted must be based upon a comprehensive survey of—

1. the importance of fuel to the nation;
2. the availability of coal of all kinds;
3. the uses to which coal is being put; and
4. the efficiency with which coal is being used.

For, as Stanley Jevons wrote in 1863: "Coal, in truth, stands not beside, but above, all other commodities. It is the material source of the energy of the country—the universal aid—a factor in everything we do. Without it we should be thrown back to the laborious poverty of early times."

It is thought by some that the problem of deciding what shall be the National Fuel Policy exists solely in the decision as to whether or not it is advisable that the mines should be put under public ownership, and that the public utilities dealing with fuel and power should be treated in a similar way. Although I have definite views on these matters, they are not sufficiently precise to elaborate here, because I, along with many others who are interested in this matter, require more facts and expert evidence on a large number of relevant questions before we can reach a final judgment on this fundamental matter.

The whole problem can be discussed from one of two points of view:

(*a*) That of coal output, and that of—
(*b*) the national requirements of heat, light and power.

If discussed from the point of view of coal output the question resolves itself into the means that shall be adopted to sell more coal and, consequently, find more work for miners and, presumably, greater profit for the owners. The other alternative is the exact opposite of this. It depends upon determining all the directions in which heat, light, and power are required, and the forms most suitable and economical in each particular case, and from this information deducing the quantities of coal and the types that are required to satisfy these demands. The latter causes one's actions to be controlled by national demands and necessities; the former concentrates the attention upon coal alone and upon finding outlets for it, and depends for its success upon the creation of new markets. I have no doubt whatever, in view of the known limited quantity of readily available coal and of the conditions under which coal has to be won, that the policy to be adopted should be that of conserving our resources to the limit of our capacity, consistent with there being an ample supply of the necessary heat, light and power, for the requirements of the community.

I do not want to bore you by elaborating at too great a length the importance of coal to this country. For all practical purposes it is the sole source of raw material for the generation of heat, light, and power. We have used it wastefully in the past, and it has been so readily accessible and available that consumers have paid little attention to its economic use, and even the masses of the population whose financial resources are extremely limited have been among the worst offenders, largely because of the extremely inefficient grates with which they have been provided. I do not think it unfair to say that from a national point of view it is essential that the coal, gas, and electrical industries shall, in future, reverse completely their past policies, and, while supplying the consumer with all his requirements of heat, light, and power in the most liberal and necessary way, shall at the same time guarantee the nation that such supplies shall be used in the most efficient way. During the 18 months I was with the Ministry of Fuel and Power my chief responsibility was to ensure adequate gas supplies to essential war factories. The problem divided itself into two parts: first, to make sure that there was sufficient carbonizing plant available and that it was efficiently maintained, and secondly, to start a campaign for the improvement of the means by which gas is used in industry. I expressed the view at a very early stage that the dangers of gas shortage for munitions purposes could be very much reduced, if not completely eliminated, if simple means were adopted to check up on the methods adopted in industry in the use of gas. In passing, it should be pointed out that it is much easier to waste gas and electricity than it is to waste coal—both supplies are on tap. They can be left on and no one notices it, whereas coal requires labour; coal has to be stocked; the stocks can be noted as being depleted; the time for replenishment is visible. This is very much borne out in the use of gas and electricity in industry.

I agree with the statements made in this year's Melchett Lecture that too little research work has been carried out in this country on the subject of combustion, and the Americans and the Germans are years ahead of us in this respect, but, having said that, from the point of view of my remarks this morning, there is any amount of evidence to show that enormous savings can be made in the use of gas, electricity, and coal by purely administrative means with existing equipment.

I noticed some months ago that some Department was strongly advocating the use of thermostats in furnaces—a most commendable policy—but my experience in the course of many visits I have paid to all types of works in the munitions industry where thermostats are in use—and there are many of them—is that, although the thermostats themselves are excellent and the furnaces may be excellent, in a great many cases the actual application of the thermostat to the furnaces leaves much to be desired, and, although there are literally many hundreds of furnaces consuming a great deal of fuel that are supposed to be thermostatically and automatically controlled, the great bulk of these have still to be hand-adjusted. The primary consideration is the maintenance of a constant temperature, with little consideration given to the means that should be adopted for attaining this end, and, consequently, falling far short of those conditions which are conducive to the maximum practicable thermal efficiency.

The greatest savings can be obtained by purely administrative means. I remember a leading gas engineer visiting a military canteen where 9 million cu.ft. of gas per month was being used for cooking and room heating. There was a 24-hour service for meals, and he asked that a record should be kept of the number of meals supplied each hour through the 24 hours. It was found that over 90% of the demands on the canteen fell within a very restricted period, very few meals being required outside that period. As a result of a notice to the effect that no meals would be supplied outside the limited period from the main canteen, there was immediately a reduction of 33% in gas consumption, which has been fully maintained ever since. I could go on instancing this kind of thing all through industry, and the Fuel Efficiency Committee, of which the Melchett Lecturer is Chairman, is fully aware of this major factor of administration. In my view, his Committee is primarily responsible, on behalf of the Ministry of Fuel and Power, for the remarkable achievements in fuel conservation of the last 12 months, achievements that cannot readily be assessed in bulk, but which can be instanced by a countless number of individual cases.

Those of us who have spent our lives in the fuel industries may occasionally feel discouraged that so limited an advance has been made. Although there is every justification in feeling disappointed in view of the consideration that has been given to the subject as a whole for so many years, one must not overlook the very definite advances that have been made. Since the last war there has been a radical increase in the fuel consciousness of the community as a whole. I own that this has been largely encouraged by the difficulties that have arisen due to unsettlement in the coal industry, but, compared with the 50 years before 1914, the subsequent 30 years have shown a great advance, and I hope I shall be excused if for a few minutes I tick off a number of things that have taken place since the last war.

I would first mention the Sankey Commission, known as the "Coal Industry Commission, 1919." This was a very thorough enquiry into the coal industry, the justification for the Commission being very similar at that date to the justification for a similar enquiry to-day. The Report of Lord Justice Sankey was not a unanimous one, and there were three minority Reports. Taken as a whole, the findings were amongst the most valuable contributions that have ever been made to a consideration of the coal industry's problems. Many of the recommendations have already been adopted.

Prior to this, arising out of the Fuel Economy Campaign in 1915, the Coal Conservation Committee, of which Lord Haldane was chairman, was created in 1916 " to consider and advise on improvements in the utilization of coal." It was found that there were many questions within the scope of the Committee's enquiry which involved research. The co-operation of the Advisory Council of Scientific and Industrial Research, which had been established in 1916, was sought, and the outcome was the formation of the Fuel Research Board, which had for its object the investigation of the nature, preparation and utilization of fuel of all kinds, both in the laboratory and on an industrial scale.

The physical and chemical survey of the national coal resources was originally proposed at the meeting of the British Association at Newcastle upon Tyne. This was taken up by the Coal Conservation Committee, and is now carried out by the Fuel Research Board.

Then in 1925 there was appointed a Royal Commission on the Coal Industry known as the Samuel Commission. The justification for the appointment of this Commission was the danger of a general strike in the coal industry, and the Government provided a subsidy until the issue of the Report. It was appointed to enquire into and report on the economic position of the coal industry, and the conditions affecting it, and to make any recommendations for the improvement thereof. The report was issued in March, 1926, and the chief recommendations were:

1. The nationalization of minerals.
2. The amalgamation of colliery companies.
3. The setting up of a National Fuel and Power Committee.

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4. The coal industry with State assistance should largely extend its research activities.

5. The following subjects should have further consideration: the distribution of coal, co-operative selling agencies, sampling, the employment of larger wagons, with concentration of ownership, and the formation of a Standing Joint Committee of the Ministry of Transport and the Mines Department.

6. Labour conditions. The nationalization of coal mines was rejected and the coal subsidy ended.

The National Fuel and Power Committee was the outcome of the Samuel Commission. It was established by the Board of Trade on Aug. 20, 1926. Its first Report appeared in Sept., 1928, and the second Report in Nov., 1928.

It is interesting to note that our Founder President, Lord Melchett, was Chairman of the National Fuel and Power Committee when the Institute of Fuel was formed in 1927, and subsequently. The Terms of Reference of the National Fuel and Power Committee were: To consider and advise upon questions connected with the economic use of fuels and their conversion into various forms of energy, having regard to National and industrial requirements in the light of technical developments.

The conclusions and recommendations of the National Fuel and Power Committee were:

(*a*) The Committee would like an opportunity of considering the question of compulsory returns of the amount of fuel used and purposes to which it is put.

(*b*) The coking industry should form a national research association.

(*c*) That co-operation was required between industry and the universities and also the educational establishments controlled by the Board of Education.

(*d*) The iron and steel industry should give greater support to its Fuel Economy Committee.

(*e*) The exchange of information on fuel utilization between large coal-consuming industries should be extended.

(*f*) Coals should be classified and bought and sold to specification.

(*g*) The question of collieries taking part in district development of electricity should be reviewed, especially with a view to the use of low-grade fuel.

(*h*) The centralization of coking plants.

(*i*) An investigation into the feasibility of a regional gas grid between Humber and Liverpool, Leeds and Birmingham.

(*j*) The mining and shipping Industries should consider the use of high-pressure steam and pulverized fuel in ships.

The second Report consists of comments on Memoranda from the National Gas Council and the Board of Trade regarding proposals for amending existing legislation relating to gas.

Since that time it is doubtful whether the National Fuel and Power Committee has met, and it would appear that there is room for further independent work, either by that body or through the Institute of Fuel itself, of a similar useful nature.

The suggested gas grid from Liverpool to Hull was considered by the Area Gas Supply Committee set up by the Board of Trade, who recommended that for the time being the only gas grid that could be justified was one confined to the Sheffield area and associated with the Sheffield industries.

During this period, up to 1928, there were many other activities of a less official nature, showing the growing interest in the importance of fuel. There was formed, amongst the institutions interested in fuel, the Joint Fuel Committee, of which the Society of Chemical Industry, The Institution of Gas Engineers, the Coke Oven Managers' Association, and the Institute of Fuel took a leading part. Between 1924 and 1928 a number of National meetings were held to discuss technical subjects, such as carbonization, and coke and tar, which culminated eventually in the World Power Fuel Conference in 1928.

The World Power Conference had been brought into being by Mr. Dunlop, of the British Electrical Manufacturers' Association, in 1924. It was held at the Wembley Exhibition, and although originally it was intended to be devoted solely to motive power, it gradually changed to cover a more comprehensive treatment of power in all its forms.

There have been many meetings of the World Power Conference in many countries, at every one of which the subject of fuel has had a leading place.

The Institute of Fuel was formed as a result very largely of the cumulative effect of most of the above activities. There had been brought into being the Institution of Fuel Technology and the Institution of Fuel Economy Engineers, and Lord Melchett brought these two bodies together in a new Institute of Fuel. This is not the place to elaborate in detail the objects of the Institute; they are well known; they have been circulated recently to all members and to the Press.

My own interpretation of them is somewhat as follows:

1. To hold a watching brief on all matters, particularly of a general character, relating to the fuel industries.

2. To fill in the gaps where important activities are being neglected, either by taking action itself or by causing action to be taken by the appropriate body.

3. To ensure adequate educational facilities for all grades in the fuel industries.

4. To provide an independent platform for the discussion of ideas—technical and administrative—without trespassing on the preserves of other institutions.

5. To assist in the co-ordination of the fuel activities of the professional institutions.

6. To encourage the development of research.

7. To encourage the application of research.

Since 1918 there have been radical changes in the electrical, gas, and coking industries; the Gas Industry changed its standards from illumination to heating, and its methods of gas production have been altered by the adoption of newer systems of carbonization, which were made possible by these changes. The electrical industry now has its Commissioners and Central Electricity Board, and production and distribution have undergone material improvement, the process of co-ordination having reached a stage in advance of that in other fuel supply industries. The coking industry, too, has been subjected to revolutionary changes. Prior to the 1914 War, the "continental" oven, as it was frequently called, was very much the exception in this country. To-day, the by-product oven is very much in the van of efficient carbonizing systems and is practically in general use. Apart from that, the switch from the carbonization of coal at the colliery to the utilization of correct blends and their carbonization at the point of use in the steelworks has undergone great development, which reached its peak of efficient application at a works in the Midlands, just over ten years ago. In this works, where there are blast furnaces, steel furnaces, rolling mills, and all that goes with a general modern steelworks, the only fuel that is used on the works is the coal that is taken to the coke ovens. The coke produced is used in the blast furnaces; the gas is used in the steel furnaces; the blast furnace gas is used for heating the coke ovens and for raising steam. The waste heat from the steel furnaces is also used for steam raising. Electricity is produced from the steam and used in the rolling mills for lighting and other purposes, and there is a surplus of electricity for outside supply, if necessary. This policy is, of course, not necessarily applicable in its fullest sense on many steelworks; but where there are blast furnaces the blast furnace gas can be used for heating ovens, and so release the higher calorific value coal gas for purposes to which the blast furnace gas cannot be applied with the same facility.

It will be noted that there has been a gradually increasing sense of fuel consciousness within all industries, and the demand for labour-saving equipment has tended to increase the fuel consciousness of the domestic consumer.

Changes began to take place, too, due to the impact of Government control over the fuel industries. The Mines Department and the Petroleum Division, which were already within the Board of Trade, were brought into closer association with gas and electricity through the transfer of the Government responsibilities concerning electricity from the Ministry of Transport to the Board of Trade in 1941. The Gas Division was already within the Board of Trade. It looked, therefore, as if this Board was going to be responsible for all necessary co-ordination of the fuel industries; but with the White Paper of 1942 dealing with the troubles in the coal industry, it was decided to set up, at any rate for the war period, a Ministry of Fuel and Power, and to transfer to that Ministry coal, gas, electricity, and oil. These changes are so recent that it is unnecessary for me to elaborate them in detail.

The Ministry can be assured that it has the fullest support of the President and Council of the Institute of Fuel. We shall continue to serve the Minister in any direction in which we are called upon to act to the limit of our capacity and irrespective of our views, opinions or conveniences, in connexion with a problem which would tax the energies of anyone, however energetic, enthusiastic, and knowledgeable he may be. We should like to assure the Minister that the services of the members of the Institute will continue to be entirely at his disposal. He has our 100% goodwill. I am certain that he will expect to receive suggestions and even criticisms of anything that may be proposed.

The Institute of Fuel feels that its primary function is to provide a platform on which any subject relating to the fuel industries can be discussed. From what I know of the Council of the Institute of Fuel, the last thing they would be likely to do is either to recommend that, say, the coal industry should be continued under private enterprise or be nationalized, but I can quite imagine the Institute of Fuel will certainly not discourage the expression of opinions, preferably supported by informed evidence, on either of these topics, it being understood that the Institute of Fuel, as such, takes no responsibility for the opinions expressed at its meetings.

Another function of the Institute of Fuel is to ensure that every phase of the problems relating to the fuel industries is explored thoroughly, conscientiously, and scientifically; also that proper means are developed for getting at the facts, and for assisting the Ministry or any other responsible body to elaborate means for the collection of information and facts. Should the Institute be satisfied on any particular subject that the problem is being reasonably and efficiently handled, it would not intervene; but it is the duty of the Institute to continue to take a broad survey of the whole fuel field and to try to fill in the gaps. As one instance of a very important nature, the Institute of Fuel might well, at a very early date, provide facilities for a discussion as to the organization of research, and even accept such subjects as the relationship between the Fuel Research Board, the British Coal Utilization Research Association, the Gas Research Board, and other fuel research activities which are to be co-ordinated by the Committee of which Sir Harold Hartley is chairman. In a

democratically run country, such as we claim ours to be, the organization of fuel research administration is a topic on which many people have very definite views, and it cannot be considered presumption for such views to be expressed publicly, subject to the speakers providing evidence for their views as distinct from opinions. I have heard the opinion expressed that Sir Harold Hartley's Committee, which, I believe, has not yet had an opportunity of meeting, should be something more than a joint meeting of research associations. This needs to be discussed. At the same time, others have expressed the view that the relationship between the Fuel Research Board and the research associations should be that of equality.

These views have some relationship to the general trend that one can note in the method of carrying out research. This was touched on by the Melchett Lecturer when he indicated that certain types of research will in future be carried out on existing works on full-scale plant, and that information will be obtained by the collection of data from many plants of a similar type rather than that such researches should be confined to specially designed plants or laboratories isolated from industry. I have personally great sympathy for such a policy. Having been closely connected with process work for so many years, I have no doubts that the more operators of industrial plants are brought into association with actual research work, without being necessarily responsible for it, the better it will be for research and for industry.

The Institute of Fuel will not trespass on the vital concerns of other fuel institutions. The officers of the Institute receive daily many enquiries from interested people, both in this country and abroad, on a diversity of subjects relating to the fuel industries. Whenever these enquiries for technical information of any kind refer to a particular fuel industry, the function of the officers of the Institute of Fuel is to indicate to whom the enquiries should be addressed. Sometimes it is to The Institution of Gas Engineers, sometimes to the British Commercial Gas Association, sometimes to B.E.M.A. or the Institution of Electrical Engineers. More often, the enquiries are switched to the Ministry of Fuel to the particular department or division of the Ministry. It is not the function of the Institute to act as a go-between unless specially requested to do so, and what I have indicated as the policy of the Head Office staff and personnel applies just as strongly to the policy that should be adopted by the local sections. If the Institute is to pull its full weight and be of maximum use within the community, it requires strong enthusiastic local sections. The most valuable part of this work should be through local sections, and it is therefore most important that a well-informed democracy of fuel users and producers should be cultivated amongst the local sections.

Now, in the regions there are many Societies which to some extent are connected with all the fuel industries. It is more and more becoming the custom for meetings on fuel questions to be open to the members of all interested societies. It is a function of local sections of the Institute of Fuel to encourage such a policy; the local sections must be flexible. It is not essential that all meetings on fuel subjects should be labelled as being under the auspices of the Institute of Fuel, so long as the system is working efficiently within each region. The means used to bring this about should be suited to the district in question, there being no hard or fast rules in the methods adopted, the only criterion being that the Committee of the local section of the Institute shall be satisfied that what is being done reasonably meets the requirements of the fuel interests in that particular region.

One of the most useful agencies that have come into existence in recent years has been the organization known as Political and Economic Planning. There has been a great deal of adverse discussion on the subject of "planning," but none of it from any quarter has in any way convinced the man in the street that planning is inadvisable and wrong. At the same time, any thinking man will agree that it is unwise to plan in the absence of knowledge, information, and experience, with the planning based upon purely theoretical considerations. It is also generally agreed that unnecessary planning is frequently wasteful, which is another way of saying that one should not plan in advance of the known facts. From what one has read of P.E.P. it would appear that this body confines itself very largely to factual statements obtained from experts in each particular branch of industry, and that the only planning which is done by them is to indicate alternative solutions. P.E.P. has shown its evaluation of the importance of fuel to the community by issuing a number of very full reports on the coal industry, the electrical industry, and the Gas Industry, and it has been announced that very shortly it will be issuing a report on fuel as a whole. We look forward to receiving this report.

In some quarters it is assumed that a National Fuel Policy would require that at one and the same time coal, gas, and electricity should be taken over by a single body who should own it as a whole, and that the problems of each should be settled along similar lines to one another. That indeed would be revolutionary, and, if it is right, be none the worse for that, but I personally believe in taking one step at a time, and I feel that it would be better to try to solve the major problems of each of the industries—coal, gas, and electricity—prior to giving any serious consideration to a further integration, always bearing in mind that all problems must be solved in terms of the national interest. The national interest requires three healthy industries, each efficient and each giving good service. It would never be healthy to allow one industry to succeed at the serious and unjustifiable expense, from the national point of view, of any of the others. It has been suggested that in order to bolster up gas and electricity the country should be divided into areas in some of which gas would be solely available to consumers for heating and in others electricity. This cannot be taken seriously, and I believe it is generally agreed that gas, electricity, coke, and coal should within reasonable limits be available to everyone. In connexion with town and country planning, it is almost inconceivable that the planned groupings of the population will not justify on both economic and national grounds the making available of supplies of gas, electricity, coal, and coke to all who wish to have them. If this point could be agreed, many of the problems that have been envisaged will have been solved.

It would appear, too, that if the experience of some other countries is to be utilized, it may be advisable for Parliament to appoint a Tariff Commission which, having been given broad terms of reference, would apply them to the selling prices of coal, coke, gas, and electricity, so as to ensure equitable treatment on similar lines (though not the same) to each of the fuel industries.

The Ministry of Fuel and Power has done a great deal through the Fuel Efficiency Committee to develop educational courses for industrial and other users of fuel. The Institute of Fuel is making education one of its main activities, and is not confining the question of education purely to that of either the fuel user or the fuel technologist. The Institution of Gas Engineers, the Institution of Electrical Engineers, and other professional institutions have their own educational schemes which set up standards of qualification and of proficiency for those engaged within their respective industries. But all industries have a fuel interest, and, apart from the two mentioned, such interest is primarily with the fuel user rather than with the fuel producer. Hence, when industry itself has been satisfied with these standards of education, there is still the domestic user. Apart from this, the Institute of Fuel has a section of membership known as the Fellowship. To become a Fellow it is necessary to have a certain standard of education and experience in fuel subjects. The Council proposes to attempt to co-ordinate all these varied educational requirements by suggesting that all those who have in any way taken any part in setting up standards of education in any branch of fuel should collaborate, with the object of eliminating unnecessary duplication at any stage in the educational systems. If such a conference could agree on the main lines of policy and as a group approach the Ministry of Education to implement their findings, the Minister migh tfavourably consider proposals having for their object the inculcation into the minds of those taking the School Leaving Certificate sufficient elementary science and practical experience to enable them to appreciate the elementary problems of heating and ventilation which are met with in everyday life.

The Council of the Institute of Fuel should reflect the views of the regions through the local sections. It should also reflect the views of Industry in general and the major activities connected with fuel. It is interesting to note that the following organizations are at present, among others, represented on it: the Fuel Research Board, the Central Electricity Board, the Gas Research Board, B.C.U.R.A., The Institution of Gas Engineers, the Institution of Mining Engineers, the Local Sections, the Electrical Power Engineers' Association, and the Iron and Steel Institute. Although these representatives cannot pledge their organizations on any general matter of policy, their representation does ensure that each of their organizations knows what is going on and is able, through its representative, to add its quota of experience and advise on any matter that comes up for settlement.

The Institute of Fuel will have, in the very near future, to look to other sources of income than that of its membership subscription. Up to date, the financial position has been an exceptionally satisfactory one, but if the Institute is to take its place and do what is expected of it, it will have to have an increase in funds, and the source of this must be such that no conditions of a commercial or policy nature will be attached.

I have no doubt that it will have been expected that I would have dealt in this Address more particularly with the place of the carbonizing industries in the scheme of things. I felt, however, that whether this Address be read by fuel enthusiasts, or by the average man in the street, I should be preaching to the converted.

Then there is oil. I hope those who are interested will forgive me for confining my attention to home-produced fuels on this occasion.

These industries are well established, and have thoroughly justified their existence in the contribution they have made to the national economy. The only point I would make is that I believe that the time has come when from the point of view of the consumer and the national welfare, the system—or lack of system—that has grown up within the Gas Industry of so many individual autonomous units of production and distribution requires a very thorough overhaul. I firmly believe that such an overhaul is long overdue, and should not depend on the unplanned bargaining of one undertaking with another. I believe the Industry should be rationalized—as an industry as distinct from individual units—and regionalized. This is a matter of vital interest to the consumer as well as to gas undertakings. The form which such a regionalization and rationalization should take should depend on the findings and recommendations of an independent committee. This committee would take evidence from all interests concerned—both within the Industry and outside. I am well aware that the difficulties will be great, but the national interest should come first, and local parochialism and vested interests will have to be convinced that any changes that are envisaged are in the national interest. Whatever is eventually done, it is to be hoped that the new orientation

will provide still better opportunities for initiative from the administrators, the engineers, the chemists, and other technicians on whom the future of the Industry depends.

I have attempted in this Address to give a running commentary on a few of the questions engaging the attention of the fuel industry at the present time. Summarizing:

1. Fuel is not only important to the future prosperity of this country, but it is of primary importance.
2. It is believed that its problems should be studied from the point of view of the heat, light, and power requirements of the community rather than with the object of increasing the consumption of coal.
3. The problems of each industry—coal, gas, coke, and electricity—should be studied separately and solved as far as possible prior to bringing about any closer integration.
4. The study of improved methods of using fuel and power of all kinds with the object of conserving coal is of first importance.
5. Research should be increased and co-ordinated, but the lessons of researches already reported should be more fully applied.
6. There should be systematic education in the right use of fuel suitably graded for every class in the community, from children leaving school through all grades of prospective fuel users and producers.
7. The function of the Institute of Fuel is to act as a catalyst or lever by providing facilities for discussion and study and to assist, by co-ordination, all other fuel interests—when required—in their own work of development, whether they be professional institutions attached to particular industries or Government departments.
8. The Institute of Fuel includes within its membership anyone interested in the subject of fuel, whether technically or administratively.
9. Heat, light, and power, and the raw material from which they are produced, should be handled as public utilities, and coal in particular treated as a national capital asset.

The immediate problem is to see the war through without any major embarrassments due to inadequacy of supplies. The Ministry of Fuel and Power have all our sympathy and goodwill in the difficulties they have to solve. But there are not two camps—the Ministry and the rest. The Ministry is functioning for us. We will give them all the help they may call for.

REMINDERS ON UNACCOUNTED-FOR GAS

By A. PICKARD (Llanelly)

FOLLOWING a *résumé* of the "Interim Report of the Sub-Committee on Unaccounted-for Gas" (Communication No. 194) in the *Transactions* of The Institution of Gas Engineers, 1938–39, vol. 88, in which he urged that all undertakings should make the necessary corrections on the lines outlined, the Author passed on to consider some of the sources of actual losses from a practical viewpoint:

(1) With the wet-drum type of station meter to be really accurate there should be a constant water feed into the meter and automatic overflow, as every increase or decrease in pressure due to passing an increased or decreased volume of gas will create a difference in the water level, giving inaccurate registration until the water level becomes normal. Thus it follows that for accurate registration the flow of gas through the wet-drum type of station meter should be as steady and as constant as possible. Unfortunately this is not always possible where intermittent processes of manufacture such as C.W. gas are in operation, particularly where storage is inadequate or where there are particularly heavy peak loads. It is recommended that drum type station meters should be tested not less than once every year.

(2) One source of possible direct loss of gas is leakage on gasholders. In this respect it should be remembered that any leakage on the holder crown or top lift will be at the maximum pressure thrown by that holder, and for 24 hours a day, for 365 days in the year. The chief points to watch are along seams, behind carriages on spiral holders, underneath and around crown carriage base-plates on column-guided gasholders, and around the wind and water line of cup side plates and dip skirting plates. In connexion with the latter it is sometimes the practice in severe weather, particularly on small works where no steam is available for anti-freezers, to endeavour to keep the cup seal free of ice by using salt; this is very detrimental to the steelwork, though the effects would not be so pronounced if the cup water was replaced with fresh water immediately the weather improved, but this is invariably forgotten. Again, when the time comes round for painting the holders on a small works, how often is it that the painting is done with the cup water at its normal level? This level should be reduced by syphoning out at least 3 in. of water. The sheets should be allowed to dry thoroughly, be well cleaned and wire brushed, any rust or scale removed, given one or more coats of good red-lead paint well brushed in, any leakages repaired with patch bolts or plates, and, when dry, treated with a good coat of non-drying anti-corrosive paste before filling-up to the normal water line. Leakages on holder crowns are very easy to detect on a wet day. Another source of leakage is on glands and stuffing-boxes of holder valves, particularly where the valves are being regularly operated. The stuffing of these glands is normal maintenance work which I have known to be overlooked.

(3) Another source of possible leakage is on station governors and connexions. In one case within my experience a governor was found with the inlet valve body cracked right round, and it had been cemented in to try to stop the leakage, but unsuccessfully; the only possible remedy was to fit a new valve. In another case a governor was out of commission because it was said that the seal was not deep enough and blew. Examination showed that there was a hole about the size of a shilling in one side; this hole was repaired and the governor put back to work without any further trouble.

(4) We now come to mains. The essential thing is, of course, to see that a sound job is done when any new mains are laid, and the best way to do this is to subject all new mains to a much higher pressure test than they are likely to be called upon to bear, in order to provide a factor of safety. Having had experience with all the well-known patent joints and also with welded steel, I have no hesitation in saying that from the point of view of gas tightness they are all extremely efficient. It is wise policy to test all mains laid with patent joints up to 40 lb. per sq.in. (they may be converted to high-pressure mains at some time in the future), and I believe that if this were adopted by all gas undertakings as a general policy a steady reduction in unaccounted-for gas would result.

When under high pressure joints may be tested either with Felton rings or with soap solution. I have used the latter and found it satisfactory in every way. Usually a compressor and man can be hired from a local contractor at a reasonable figure, but before putting any main under compressed air care must be taken to see that each pipe is properly weighted with as much soil as possible between the joints, every bend must be properly backed with a concrete block or be suitably anchored, and the end plugs carefully strutted to prevent blowing-out.

At Llanelly we prefer cast or spun iron to steel owing to the corrosive nature of the subsoil over a large part of the town, which is built largely on made-up ground. With lead jointed main for low pressure it is not advisable to take the tests so high as with patent-jointed main. A pressure of 5 lb. per sq.in. should be ample for lead joints.

Where trouble is experienced due to subsidence and the ground is suitable there is a lot to be said in favour of welded steel main, which has a greater tensile strength than cast or spun iron, and is much less likely to fracture. Care is necessary in laying, however, to see that even slight damage to the protective coating is repaired before the ground is reinstated, and that after testing a coating is applied round each joint to make the coating continuous over the whole length of the main, otherwise corrosion will quickly set up at the uncoated points with consequent leakage and trouble in the future.

(5) Coming to gas services, leakages here generally occur at, or quite near to, the connexion into the main, and also at the point where the service passes into the building or below the edge of concrete surrounding a building under which the service passes. When putting in new services it is usually sufficient to provide the service pipe with a protective wrapping at these points, but when the ground is of a corrosive nature, such as ashes or ground made up of works refuse, then it is good policy to wrap the whole of the service from the main to just inside the building. Sometimes where the main is deep and the service short, tappings are made into the top of the main, followed by a bend; and I have very frequently found that the outside of the bend has completely gone. I would recommend that where only partial wrapping is done, this bend should be included with the wrapping. Every service should be tested under normal gas pressure with soap solution, if a high pressure test cannot be arranged. With steel mains all services should be connected by means of an expanding nipple and saddle, although I have known cases where services were screwed direct into the steel main exactly as if it were cast iron. In such cases, while the thickness of the steel may be sufficient to give a gastight joint (though this is extremely doubtful) when newly laid, the movement caused by traffic and the flexibility of the main creates a certain amount of wear. I have seen services laid in this manner which, when bared, could be pulled straight out of the main after only two or three years. The saddles are necessary to give them extra strength to the service at its point of juncture with the main and give a gastight joint. In this connexion the question of main and service testing is adequately dealt with in Chaps. X and XI in that excellent book, *Distribution by Steel*, pp. 108 to 134. It is not within the scope of these reminders to go into detail on methods of service testing, but I should like to quote here one passage from p. 130 of the above book. Under the heading "Loss of Revenue" the Authors say:

> "An untested service may be leaking to the extent of 1 cu.ft. per hour. Who knows that it is not? Or it may develop such leakage afterwards. We have previously mentioned that 1 cu.ft. per hour is roughly £1 per year loss of revenue. Suppose such a sum were asked by the consumer as way-leave for crossing his front garden, it would be most strenuously opposed by the manager; any amount of trouble would be taken to avoid it, and yet such annual charges are blindly and light-heartedly courted whenever services are laid without testing."

* From a Paper to the Wales and Monmouthshire Association of Gas Engineers and Managers, Sept. 23.

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In this respect I should like to give one example. A small gas-works making 10 million cu.ft. per year only accounted for 7 million cu.ft., giving unaccounted-for 30% of gas made; there were 650 consumers, and an expenditure of £30 was equivalent to 1d. per 1,000 cu.ft. on the price of gas sold; it will be seen that the average consumption per consumer was 10,800 cu.ft. per annum. A service leakage of 1 cu.ft. per hour is equivalent to a loss of 8,750 cu.ft. per annum, so that in every case where there was a leakage of a little over 1 cu.ft. per hour, then that consumer was a definite liability to the undertaking. And yet how small a leakage of 1 cu.ft. per hour is can be ascertained by trying to regulate a flat-flame burner on a test meter to give this consumption. It may be that some will ask, "Can small undertakings afford the expense involved in the testing of mains and services?" My answer to that would be that the expense is so small as regards new mains and services in proportion to the total cost that I must ask, "Can any undertaking not afford to test new mains and services?" I can imagine a good many reasons why it might not be possible to do this work in these difficult times—*e.g.*, shortage of labour, lack of time for supervising, difficulty in obtaining materials, plant, &c.—but not on account of expense. It is definitely more expensive not to do it with new mains; whether this applies to a comprehensive scheme for testing and repairing existing mains and services depends entirely to what extent an undertaking's unaccounted-for figure is due to this cause.

Another obvious point is to watch that all complaints regarding leakages on services or in roadways are dealt with immediately they are reported. I am fully aware that labour difficulties seriously prejudice our ability to do this in these arduous times, but whether it be viewed from the national viewpoint of fuel economy or from the purely local viewpoint of loss of revenue and loss of goodwill to the undertaking, a prolonged main or service leakage is most undesirable.

(6) We now come to my last point, which is gas unaccounted for due to inaccurate registration of consumers' meters. This is a direct loss of revenue in addition to being a contributory cause to unaccounted-for gas. In this respect one of the principal causes is inefficient ammonia removal from the gas before distribution. This has a very detrimental effect upon meter leathers, discs, and valves. I will not labour this point, but there is no doubt that many of you have read correspondence in the Technical Press on this matter a short while ago. It has been my experience that in at least 50% of cases of excessive unaccounted-for the bulk has been due to defective registration of consumers' meters. In one pre-war case within my knowledge 1,274 meters were replaced and tested; of these only 512 were registering correctly within the Board of Trade tolerances of 2% fast and 3% slow; an analysis of the remaining 762 defective meters showed:

Passing all unregistered gas	18
,, unregistered (average 5 cu.ft. per hour)	140
Registering slow (average 8%) . . .	158
,, ,, (,, 3.8%) . . .	135
,, fast (,, 6.4%) . . .	93
,, ,, (,, 3.2%) . . .	200
Leaking, &c.	18
Total	762

These were all bench tests against a test meter verified for accuracy each day against a test holder. Thus approximately 60% were defective, of which 36.5% were against the undertaking and 23.5% against the consumer. Here again the difficulty of procuring skilled labour for meter changing, testing, and repairing is a stumbling-block under wartime conditions, but everything possible to keep meters and repairs up to date should be done.

Then again, large industrial and commercial meters should be carefully watched and periodically checked, while weekly meter readings are essential. One large meter registering slow will account for a considerable quantity of unaccounted-for gas, and weekly readings with comparisons of consumptions will enable such defects to be noticed before reaching serious proportions, in addition to avoiding the trouble and inconvenience of estimating a large consumption over a period of weeks, as there very often remains a doubt of the accuracy of such estimates, both with the undertaking itself and its consumer. In one check-up of 79 such meters, 15 proved defective—*i.e.*, 19% numerically—but since this number included one 1,800, one 1,200, one 700, and one 450 cu.ft. per hour meters, all of which were working against the undertaking, the loss was appreciable.

The Next Meeting of the Fuel Luncheon Club will be held at the Connaught Rooms, Great Queen Street, W.C. 2, on Oct. 28, at 12.40 for 1.10 p.m., when Sir David Milne-Watson, Bart., LL.D., D.L., will install Mr. John Charrington as President of the Club for the coming year. After the installation Mr. John Charrington will give his Presidential Address, entitled "Certain Aspects of the Marketing of Coal."

John Wright & Co., Ltd., and Eagle Range & Grate Co., Ltd., have received a Certificate of Honour for their efforts in connexion with the "Wings for Victory" campaign.

Vitreous Enamels

We referred last week to the annual meeting of the Institute of Vitreous Enamellers. During the discussion on the Paper by Mr. J. T. Gray, Mr. G. C. Holliday, of the Gas Light and Coke Company, remarked that the Gas Industry was responsible to some 10 million consumers for supplying appliances and giving good service. These customers and appliances were always with the Industry, and therefore the Gas Industry had the responsibility of ensuring that the appliances supplied, and their finish, would give reasonably good service. In an attempt to forecast the behaviour of enamels in use, one large gas company had for some years adopted certain methods of test and codes of rules for acceptance or rejection. Personally he felt the time was ripe, if not over-ripe, for immediate co-operation between the vitreous enamelling trade and users such as the Gas Industry in the formulation of agreed standards and tests for enamel finishes which would ensure the best possible service to the consumer. Incidentally, it was fairly certain that the housewife's demands would be more exacting in the post-war years than formerly, and the contribution that enamel could make to labour saving and ease of cleaning in the home and so on was potentially very great.

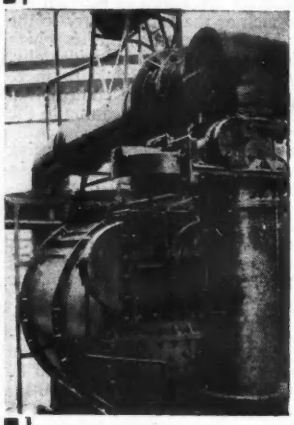
The Gas Industry, of course, was alive to the possibilities of using new materials and finishes alternative to vitreous enamel and must, in the interests of its consumers, weigh very carefully the relative advantages of these alternatives. The Author had expressed a doubt whether there would be much renovation and re-enamelling in the immediate post-war years. While it was difficult to foresee conditions during this period, it was possible that quite substantial re-enamelling might have to be done while the production of new types of appliance was getting under way.

There were one or two problems which he suggested should be the subject of immediate research. Better heat-resisting and corrosion-resisting enamels were wanted for cooker hotplate bars, which in the hottest zones might have to withstand temperatures up to 1,000°F. Improved enamels for cooker oven linings, which might reach 700°F., were also required. More attention was required to the relieving of stresses and strains on enamelled sheet, to the protection of exposed edges from chipping and corrosion, and to the methods of assembling sheet metal appliances.

Finally—and he knew this was not an easy problem—was there any possibility of getting really satisfactory "beau" finishes for post-war appliances? All the kitchen planners he had met, if they had anything in common—and that was not often the case—usually wanted a one-colour scheme for kitchen equipment, and that colour was usually cream.

The Post-War Homes Exhibition held recently at Messrs. Selfridge's was visited in the course of three weeks by over 50,000 people. Our photographs show Major Atho, Secretary of the Incorporated Association of Architects and Surveyors, explaining the salient features of a housing estate layout to Lady Sinclair, who performed the opening ceremony. The public were effectively reminded of the service gas can fulfil in post-war homes by the display of three "Ascot" instantaneous gas water heaters and a gas cooker.

When a Joint leaks—



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Products Prices—Stocks and Shares

The London Market Oct. 18.

All Coal Tar Products are in good demand, and Pitch in the London area remains about 45s.

An Order entitled The Control of Toluene (No. 3) Order, 1943 (S. R. & O. 1943, No. 976), came into force on July 20, and introduced certain changes in the prices for different grades of Toluene.

There is nothing of interest to report regarding Coal Tar Products, except that there is official tightening up of the purposes for which Refined Coal Tar may be supplied.

The Provinces Oct. 18.

The average prices of gas-works products during the week were: Pitch and Crude Tar,* Toluole, naked, North, 90's, 1s. 10d., pure, 2s. 7½d. (controlled by the Control of Toluene No. 3 Order, dated July 14, 1943, operative from July 20, 1943). Naphtha and Xylole controlled by the Coal Tar Naphtha and Xylole Order, 1943, dated May 31 (S. R. & O., 1943, No. 768), operative from June 1. Carbolic acid, 60's, naphthalene, and anthracene controlled by the Coal Tar Products Prices Order S. R. & O. 2509, dated Dec. 7, 1942, and operative from Jan. 1, 1943. Filtered heavy oil (min. gr. 1,080), 7½d. to 8d. Creosote oil has been generally controlled as to direction and price for some time past. Current value—fuel grades 5d. to 5¼d.; timber preservation and other purposes 4¾d. to 6d.

* In regard to pitch and crude tar prices we would ask readers to refer to the editorial note on p. 396 of the "JOURNAL" for Sept. 10, 1941.

Tar Products in Scotland Oct. 16.

A steady demand for all products continues. Refined tar controlled. Value is 4½d. per gallon *ex* Works, naked. Creosote oil: Specification oil, 6½d. to 7d.; low gravity, 7¼d. to 7½d.; neutral oil, 6d. to 6½d.; hydrogenation oil, 5⅞d. per gallon; all *ex* Works in bulk. Refined cresylic acid is active at 3s. 6d. to 4s. 6d. per gallon *ex* Works, naked, according to quality. Crude naphtha: 6½d. to 7d. per gallon. Solvent naphtha: Basic prices delivered in bulk, 90/160 grade, 2s. 8d., and 90/190 Heavy naphtha, Unrectified, 1s. 10½d.; Rectified, 2s. 3d. per gallon. Pyridine: 90/160 grade, 13s., and 90/140 grade, 15s. per gallon.

A more confident tone has been in evidence on the Stock Exchange during the past two weeks and prices generally continue to be well maintained.

The Gas Market has been a trifle more active, although in this section prices have shown more fluctuations. It will be noticed that the ordinary stocks of several of the holding corporations have improved slightly, though Gas Light and Newcastle units both dropped 3d. A feature in the Official List was the rise of 5s. in Cape Town Preference. There were more changes than usual in the Supplementary List, Eastbourne "B" and Mid Southern Utility "A" being particularly noticeable, the latter recording a sharp rise of 15 points.

The following price changes were recorded during the past fortnight:

OFFICIAL LIST		
Alliance & Dublin	105—115	+5
Bombay (*x.d.*)	23/6—25/6	Oct. 11
Cape Town 4½ p.c. Cum. Pref.	50/—70/-	+5/-
Commercial Ord.	69—72	−2
Gas Light Units	18/9—19/9	−-/3d.
Imperial Continental Ord.	95—98	−1
Montevideo Ord.	94—99	−1
Severn Valley Ord.	21/3—22/3	+-/6d.
South-Eastern Gas Corporation Ord.	21/—22/-	+-/3d.
South Suburban 4 p.c. Pref.	89—94	+1
United Kingdom Gas Corporation Ord.	21/9—22/9	+-/3d.
SUPPLEMENTARY LIST		
Brighton 5 p.c. Deb.	120—125	−2
Croydon 4 p.c. Pref.	91—96	+2
Eastbourne "B"	62—67	+7
Mid-Southern Utility "A"	105—110	+15
North Middlesex 5 p.c. Pref.	104—109	−
PROVINCIAL EXCHANGES		
Bristol Ord.	115—117	+1
Chester 3½ p.c. Deb.	86—90	+9
Liverpool 5 p.c. Ord.	109—110	+⅜
Newcastle Units	23/6—24/-	−-/3d.
Ditto 4 p.c. Pref.	101—103	+2
Weston-Super-Mare Ord.	108—110	+3

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